

WHAT IS CLAIMED IS:

1. A method of continuously producing polyalkylbiphenyls, comprising the steps of:

(1) supplying reaction raw materials containing at least biphenyl and an olefin to a fixed-bed flow system reactor wherein the mol ratio of olefin/biphenyl is 0.3 to 3 at the inlet of the reactor and reacting the raw materials in the presence of a solid acid catalyst to obtain a reaction mixture containing monoalkylbiphenyls and dialkylbiphenyls;

(2) separating a fraction containing biphenyl and at least a part of monoalkylbiphenyls from said reaction mixture;

(3) circulating the fraction separated in said step (2) to said reactor such that the ratio by weight of biphenyl to monoalkylbiphenyls is designed to be 0.1 or more and is designed to be less than the solubility of biphenyl to monoalkylbiphenyl at a circulation temperature; and

(4) recovering polyalkylbiphenyls containing at least one of 3,3-dialkylbiphenyl, 3,4'-dialkylbiphenyl, 4,4'-dialkylbiphenyl and 3,5'-dialkylbiphenyl from the reaction mixture through said step (2).

2. A method of continuously producing polyalkylbiphenyls according to claim 1, wherein the concentration of dialkylbiphenyls in the fraction separated in said step (2) is made to be 15% by mass or less.

3. A method of continuously producing polyalkylbiphenyls according to claim 1, wherein the amount of dialkylbiphenyls in the fraction separated in said step

(2) is made to be 30% by mass or less of the amount of dialkylbiphenyls produced in said step (1).